Oysters

North Sea

Oysters are defined as: Monomyarian bivalves that are cemented by their left valve to the substrate in the post-larval state (Bayne, 2017). Since 1950, the primary oyster that can be found in the North Sea is the invasive Pacific oyster (*Crassostrea gigas*) (Berghahn & Ruth, 2004). Other oyster species in the North Sea include: European oysters (*Ostrea edulis*) and the Portuguese oyster (*Crassostrea angulata*) (Drinkwaard, 1998) Oysters fall within the category of filter feeders. Filter feeders are creatures capable of assimilating suspended or floating organic matter via a complex filtration organ(s) that allow them to syphon sustenance from the water column (Jeschke et al., 2007).

History/ Population trends

Oysters have been gathered and farms many centuries. Hunter gatherers have collected and hunted marine resources since about 7500 years ago (Lotze, 2007). The first farming of oyster in the Sea occurred about 5000 years ago to 500 years ago (Lotze, 2007). Then mammal and fish farms took over the original function of the oyster farms, causing an increase in oyster picking (Lotze, 2007). However, oysters were harvested so intensely that the last confirmed European oysters (*Ostrea edulis*) in the Wadden Sea, were found in the early 1950's (Berghahn & Ruth, 2004). This disappearance, in part, allowed an invasive species of oyster to become the primary oyster in the area (Berghahn & Ruth, 2004; Nell, 2002).

In 1985, the West coast of North America started with the production of commercial triploid oysters (Nell, 2002). A triploid oyster means that the oyster has three DNA-strands in its genome, instead of one (Sellars, 2013). This causes triploid oysters to produce no offspring and not even sperm or egg cells (Nell, 2002). Before the triploid oyster, people often would not eat oysters during their breeding season (Nell, 2002). Therefore, the oyster production from farms increased significantly (Nell, 2002; Berghahn & Ruth, 2004).

Miscellaneous

- The largest oyster ever found was a Pacific oyster from Denmark, with a shell length of 35.5cm (Guinness World Records, 2018).
- The oldest fossil that was reliably identified as a species of oyster is 252 to 251 million years old (Hautmann et al., 2017).
- One of the largest oyster-banks is the Doggersbank in the North Sea (Frölke, 2018).

Diets

- Zooplankton (Jeschke et al., 2007)
- Phytoplankton (Jeschke et al., 2007)

Sources

Bayne, B. L. (2017). *Biology of Oysters*. Google Books. Retrieved November 13, 2024, from https://books.google.nl/books?hl=nl&lr=&id=jZbBCQAAQBAJ&oi=fnd&pg=PP1&dq=Oysters+AND+definition&ots=Tm8kVgDmNG&sig=1w4-lIOEdYU0cOlEgKwlUbwu-fk&redir_esc=y#v=onepage&q=Oysters%20AND%20definition&f=false

Berghahn, R., & Ruth, M. (2004). The disappearance of oysters from the Wadden Sea: a cautionary tale for no-take zones. *Aquatic Conservation Marine and Freshwater Ecosystems*, *15*(1), 91–104. https://doi.org/10.1002/aqc.635

Drinkwaard, A. C. (1998). Introductions and developments of oysters in the North Sea area: a review. *Helgoländer Meeresuntersuchungen*, *52*(3–4), 301–308. https://doi.org/10.1007/bf02908904

Frölke, G. (2018). *Nature enhancing opportunities for an artificial North Sea island* [Master Thesis, T.U. Delft]. https://repository.tudelft.nl/file/File_73a072ab-25cb-44ed-b292-e3fd3797fe83?preview=1

Guinness World Records. (2018, August 31). *Largest oyster*. Retrieved November 13, 2024, from https://www.guinnessworldrecords.com/world-records/largest-oyster#:~:text=The%20largest%20oyster%20is%20a,in%20the%20Vadehavscentret%2C%20Vester%20Vedsted.

Hautmann, M., Ware, D., & Bucher, H. (2017). Geologically oldest oysters were epizoans on Early Triassic ammonoids. *Journal of Molluscan Studies*, *83*(3), 253–260. https://doi.org/10.1093/mollus/eyx018

Jeschke, J. M., Kopp, M., & Tollrian, R. (2007). Consumer-food systems: why type I functional responses are exclusive to filter feeders. *Biological Reviews/Biological Reviews of the Cambridge Philosophical Society*, *79*(2), 337–349. https://doi.org/10.1017/s1464793103006286

Lotze, H. K. (2007). Rise and fall of fishing and marine resource use in the Wadden Sea, southern North Sea. *Fisheries Research*, *87*(2–3), 208–218. https://doi.org/10.1016/j.fishres.2006.12.009

Nell, J. A. (2002). Farming triploid oysters. *Aquaculture*, *210*(1–4), 69–88. https://doi.org/10.1016/s0044-8486(01)00861-4

Sellars, M. (2013). Triploidy. In *Elsevier eBooks* (pp. 187–188). https://doi.org/10.1016/b978-0-12-374984-0.01582-5